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On *nivea*-group of *Ourapteryx* Leach and on the systematic status of *O. yerburi* Butler from Pakistan, with description of a new species from Korea (Geometridae, Ennominae)

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Abstract *Ourapteryx yerburi* Butler is redescribed, *O. sinata* Wehrli is newly synonymized with it and *O. virescens* Matsumura is downgraded as a subspecies of it. A new species is described from Korea and *O. nivea* Butler is redescribed.

Key words *Ourapteryx*, *Ourapteryx nivea*-group, *lectotype*, *paralectotype*.

Ourapteryx yerburi Butler, 1886, founded on a single female from Murree, Northeast Pakistan, has been treated as a junior synonym of *O. ebuleata* Guenée (Hampson, 1895) or "perhaps an aberration" of it (Prout, 1915). Upon re-examination of the holotype, however, I found that it is an independent species belonging to the *nivea*-group, specifically identical with *O. sinata* Wehrli from East China.

In the *nivea*-group of *Ourapteryx* (*cf.* Inoue, 1985, *Bull. Fac. domest. Sci. Otsuma Wom. Univ.* 21: 77, 93) the ductus bursae of the female genitalia is very slender, about twice length of corpus bursae, about one-third or half from the genital opening it is membranous, not or weakly striped. In this paper *O. yerburi* and its close relatives belonging to the same group will be described.

In writing this paper I am much indebted to Dr M. J. Scoble, British Museum (Natural History), London, for a loan of the holotype of *O. yerburi* and to Dr D. Stünning, Zoologisches Forschungsinstitut u. Museum A. Koenig, Bonn, for a loan of the type-series of *O. sinata*. I also thank Mr T. Haruta, Tokyo, for a gift of Nepalese specimens, Dr K.-T. Park, Department of Agrobiology, Kangweon National University, Chuncheon, for Korean specimens.

All the specimens, including the type-series, recorded in this paper are in the collection of the British Museum (N. H.), excepting those specified.

Ourapteryx yerburi *yerburi* Butler, stat. rev. (Figs 1-4)

Urapteryx yerburi Butler, 1886, *Proc. zool. Soc. Lond.* 1886: 388.

Ourapteryx ebuleata (part.) : Hampson, 1895, *Fauna Br. Ind.*, Moths 3: 145, nec Guenée, 1857.

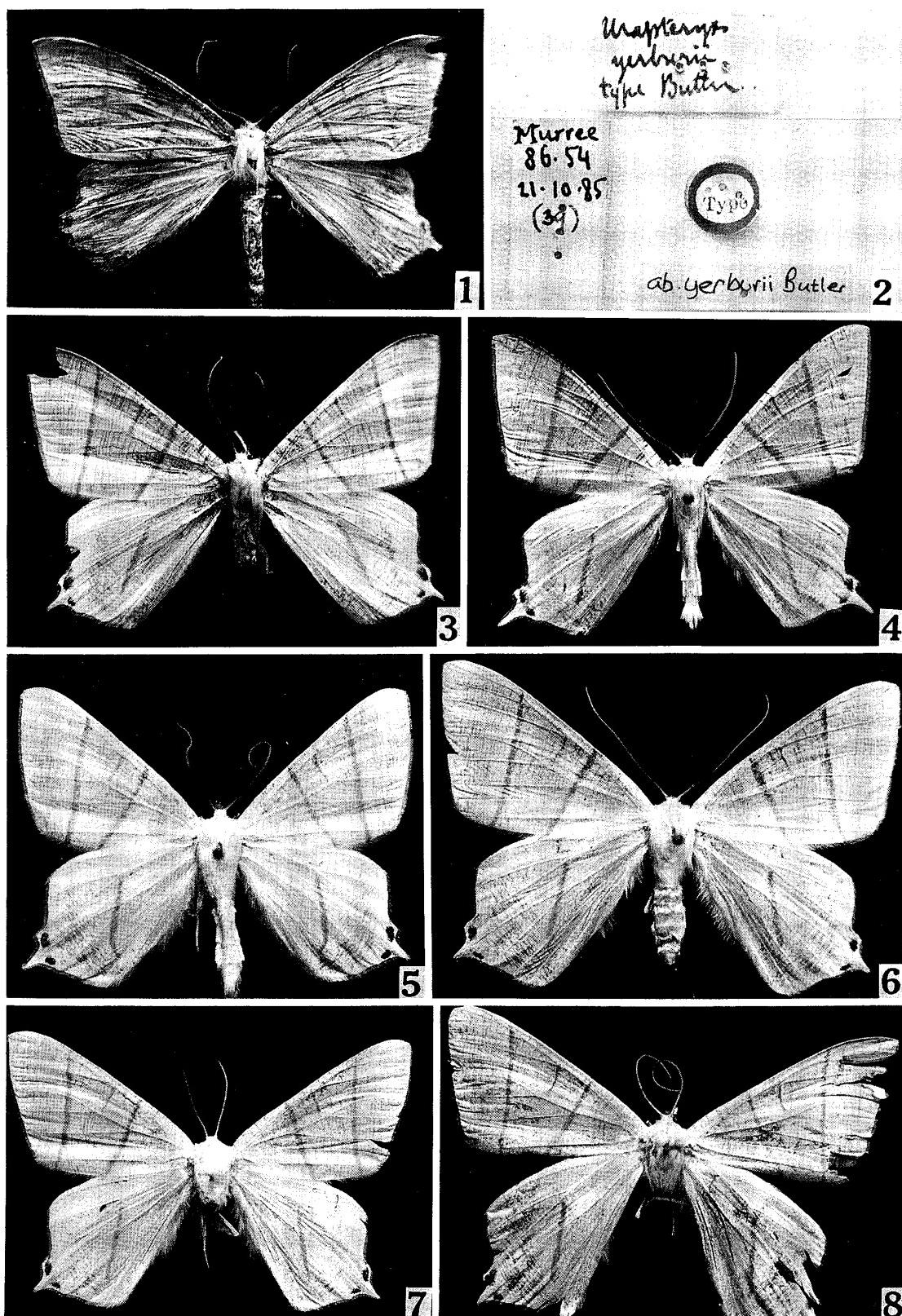
Ourapteryx ebuleata ab. (?) *yerburi* : Prout, 1915, in Seitz, *Macrolepid. World* 4: 335, nec Guenée, 1857.

Ourapteryx sinata Wehrli, 1940, in Seitz, *Macrolepid. World* 4 (Suppl.): 352, pl. 28: a. **Syn. nov.**

Ourapteryx ebuleata szechuanica : Chu, 1981, in Chu, et al., *Icon. Heteroc. Sinica* 1: 125, pl. 34: 886, nec Wehrli, 1940.

The holotype of *O. yerburi* is "a discoloured [and wrinkled winged] ♀" as Prout, *loc. cit.*, describes, but a close examination of the external and genitalic characteristics revealed that it belongs to *nivea*-group specifically identical with *sinata*.

O. sinata was founded on a series of specimens from Ginfu-Shan, Southeast Szechuan (=



Figs 1-8. *Ourapteryx* spp. of *nivea*-group. 1. *O. yerburi* Butler, holotype ♀. 2. *Ditto*, labels. 3. *O. yerburi* Butler. Lectotype, ♂, of *O. sinata* Wehrli. 4. *O. yerburi* Butler, ♂. 5. *O. nivea* Butler, ♂. 6. *Ditto*, ♀. 7. *O. koreana* sp. nov., holotype ♂. 8. *Ditto*, para-type ♀.

Zhejiang), East China, without designation of the holotype, though Wehrli states "ganz China bis Kwantung und Tibet". I will here select the illustrated male as the lectotype and three males and one female as the paralectotypes. Face dark ochreous brown, ventral area narrowly whitish. Forewing with termen straight, hindwing with tail rather short, shoulder at the end of vein 6 pronounced, angled. Both wings white, densely striated with grey-brown, faintly yellowish at terminal area of hindwing, costal margin of forewing with striae darker, those at subterminal area of hindwing coalescent. Fringe of forewing pale ochreous brown, that of hindwing reddish, blackish at base. Tail-base spots heavy, the dorsal one red-brown margined with black, the two spots are not connected by a dark grey or blackish band. Transverse lines greyish brown, rather thick, forewing with cell-end bar usually slender, but sometimes as thick as the transverse lines.

Male genitalia (Figs. 9, 10). Furca broad, in the lectotype of *sinata* (Fig. 9) (Wehrli's slide 7005) curved inward at one-fifth from apex, apex rounded, in other specimens it is acutely incurved or bent near apex, reaching a little above tip of gnathos (Fig. 10). Female genitalia (Figs. 16, 17). Ductus bursae with caudal one-third membranous, signum (Figs 21, 22) small, circular, frill narrow, surrounded by short spines.

Specimens examined. Holotype, ♀, of *yerburii*, Murree, Pakistan. Lectotype, ♂, of *sinata*, here designated, labelled: Ginfu-Shan, Nr. Nanchuan, S.-O. Szechuan (=Sichuan), Juni 1932 (leg. Friedrich), Coll. Dr Wehrli, Museum A. Koenig. Paralectotypes of *sinata*, here designated: data as lectotype, 1 ♀; type-locality, May 1929, 1 ♂; *ditto*, September 1929, 1 ♂; 1 ♂ 1 ♀, Museum A. Koenig. Other material. China: Wenxian, Sichuan, 26. ix. 1965, 1 ♂, Academia Sinica. Chengdu, Sichuan, 2. viii. 1980, 1 ♂ (M. Hara), *ex* Y. Kishida. NW. India: Bhimtal, 1,500 m, Kumaon, Uttar Pradesh, 5. viii. 1982, 1 ♂. Nepal: Godavari, 1,600 m, 8, 11, 16. v. 1992, 4 ♂; Mt. Phulchouki, 2,075 m, 31. v. 1992, 1 ♂, *ex* T. Haruta.

Distribution. East China, Nepal, Northwest India, Pakistan.

The specimens collected in August and September in China (length of forewing: ♂ 23 mm) are smaller than those collected in May and June (♂ 25-27 mm, ♀ 27 mm).

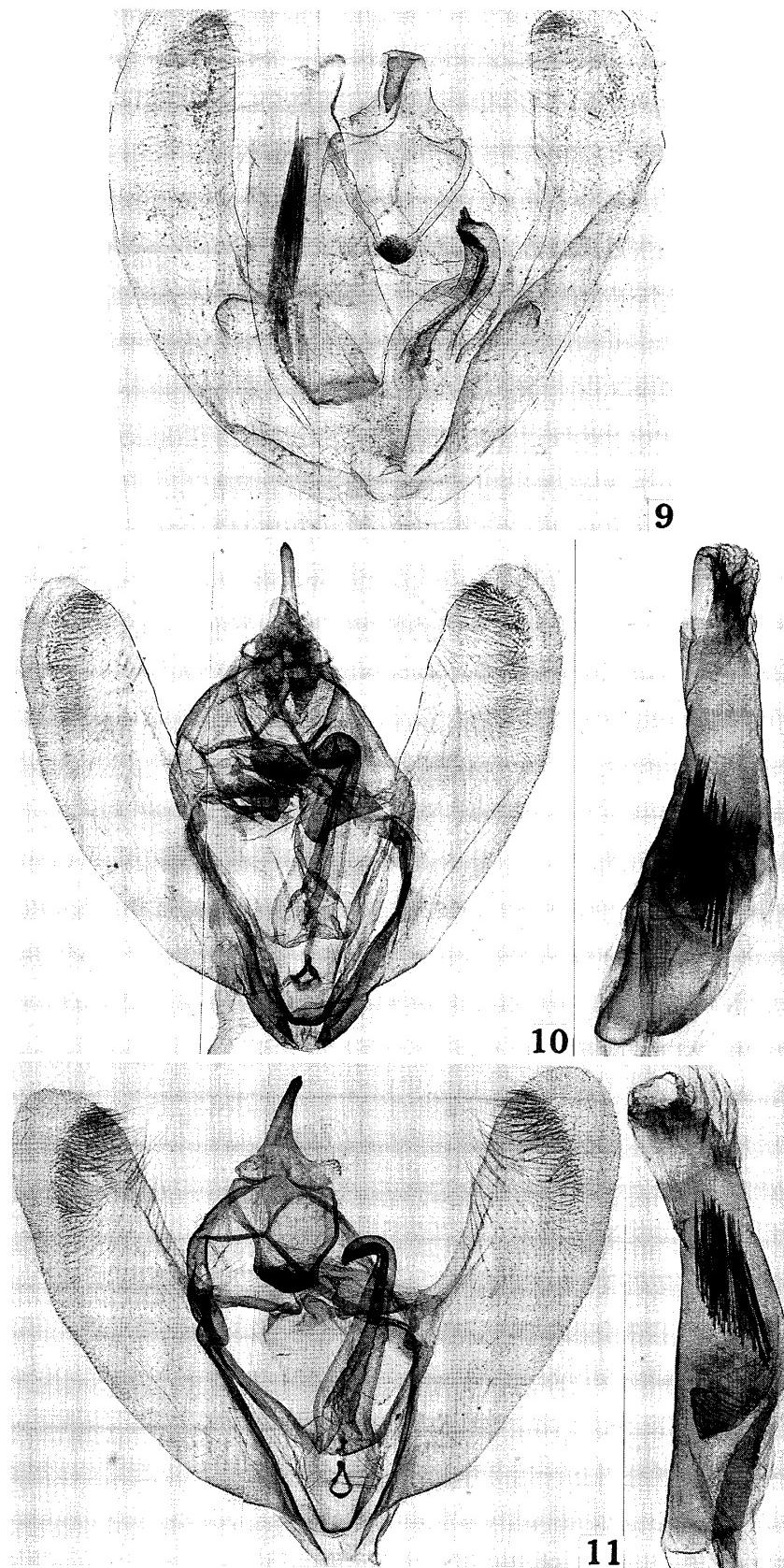
The two male paralectotypes of *sinata* may be conspecific with *koreana* described below, but they are omitted from the type-series of it. One of them (collected in May) is almost identical with *koreana* not only in the male genitalia (Fig. 12) but in its coloration and the shape of tail, but both wings with greyish strigulation much heavier and the spots at the base of tail a little larger. In the other specimen (collected in September) wings are not pure white, but faintly tinged with lemon yellow, the shape of the furca (Fig. 13) is nearly identical with that of the spring specimen.

Ourapteryx yerburii virescens Matsumura, stat. nov.

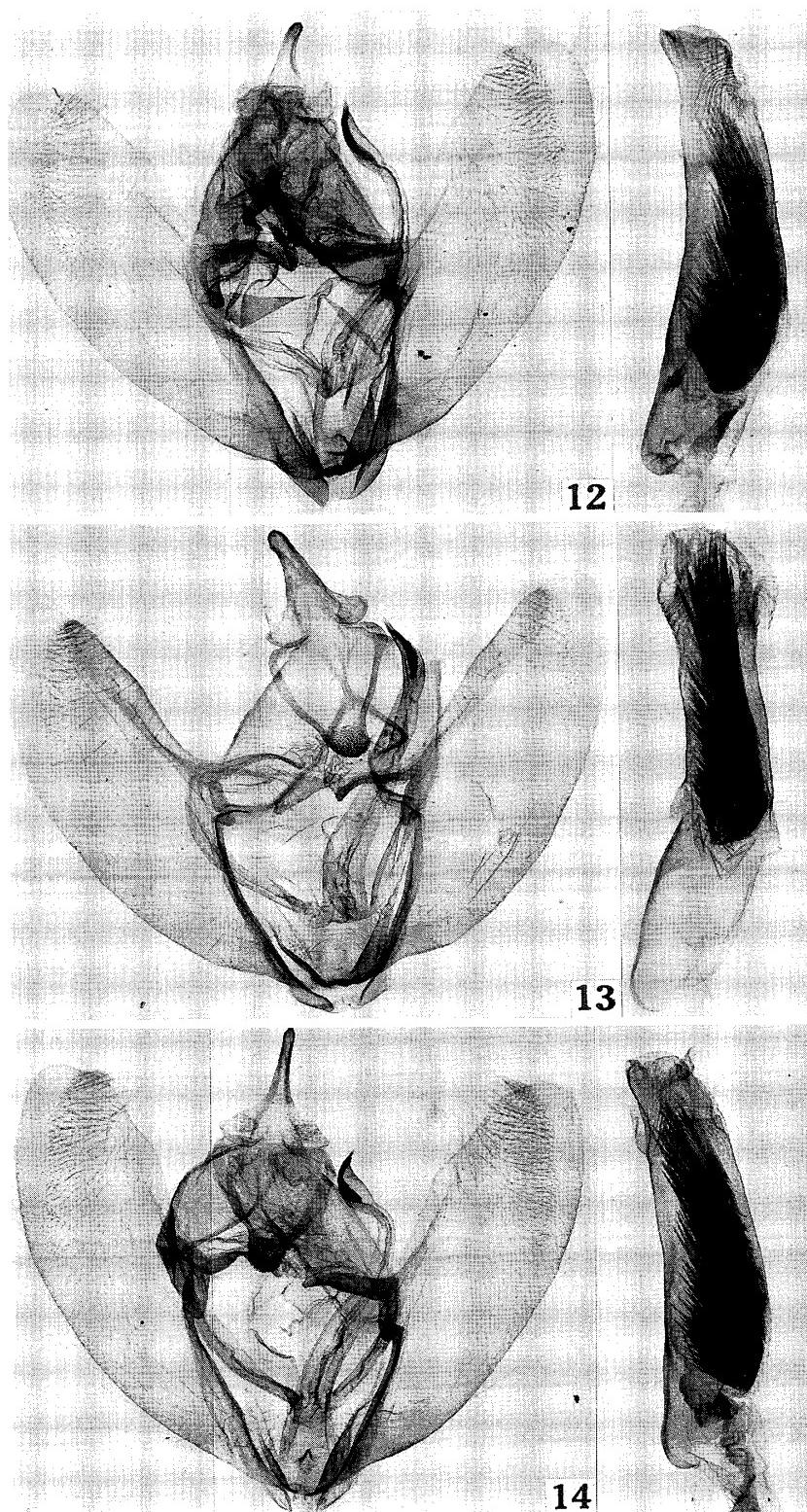
Ourapteryx virescens Matsumura, 1910, *Thousand Insects Japan* (Suppl.) 2: 77, pl. 23: 16.

This Taiwanese representative was redescribed by me in detail (1985, *op. cit.*: 91, figs 20, 21, 26, 43, 107). Its facies is almost identical with the nominotypical *yerburii* and its size is nearly same, but the furca (Fig. 11) in the male genitalia is not so acutely downcurved nor dilated.

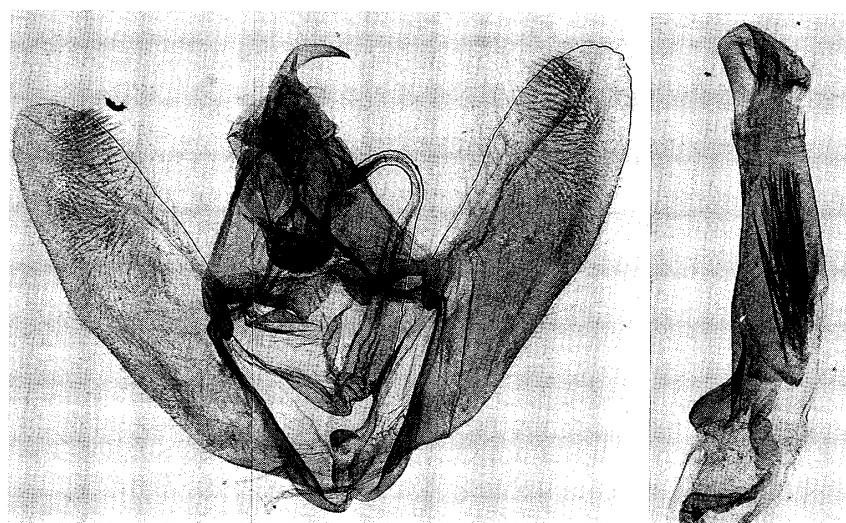
For collecting sites and dates of capture, see Inoue, 1985, *loc. cit.*



Figs 9-11. Male genitalia of *Ourapteryx* spp. of *nivea*-group. 9. *O. yerburi* (lectotype of *sinata*). 10. *Ditto* from Bhimtal (HI Slide 12269). 11. *O. yerburi virescens* Matsumura (HI Slide 10324).



Figs 12-14. Male genitalia of *Ourapteryx* spp. of *nivea*-group. 12. *O. koreana* (?). Paralectotype of *sinata*. 13. Ditto (HI Slide 1614). 14. *O. koreana*, paratype (HI Slide 14229).

Fig. 15. Male genitalia of *Ourapteryx nivea* Butler (HI Slide 14257).

Distribution. Taiwan.

***Ourapteryx koreana* sp. nov. (Figs 7, 8)**

Ourapteryx persica : Shin, 1983, in Shin, et al., *Illust. Flora & Fauna Korea* 27 (Insecta IX) : 271, pl. 14 : 204, nec Ménétriès, 1832.

Ourapteryx nivea : Shin, 1983, op. cit. : 271, pl. 14 : 205, nec Butler, 1884.

A close relative of *yerburii*, but face whitish at centre, both wings with greyish strigulation weaker, hindwing with tail shorter, shoulder at the end of vein 6 weaker, the spots at the base of tail smaller, the ventral one represented by merely a black dot. Length of forewing : ♂ 22-25 mm, ♀ 27-29 mm.

Male genitalia (Fig. 14). Furca gently curved inward, apical area dilated, strongly tapered, apex reaching base of uncus. Female genitalia (Fig. 19). Almost identical with those of *nivea*, but signum with spines surrounding frill more numerous.

Holotype, ♂. Gwang-Reung, Korea, 18. vi. 1987 (Kap. Jae Won). Paratypes. Type-locality, 21. viii. 1987, 2 ♂ (same collector); Chuncheon, 7. vii. 1983, 1 ♂ (K. T. Park); Mt. Hanra, Isl. Jeju, 13. vii. 1968, 1 ♀; ditto, 5. vii. 1986, 1 ♂ (K. T. Park). Chōanji, Uchikongō in the Kongosan-mountains (=Kumgang-san, Kangwon Do), 28. vii. 3 ♂, Museum A. Koenig.

Distribution. Korea (excepting the north).

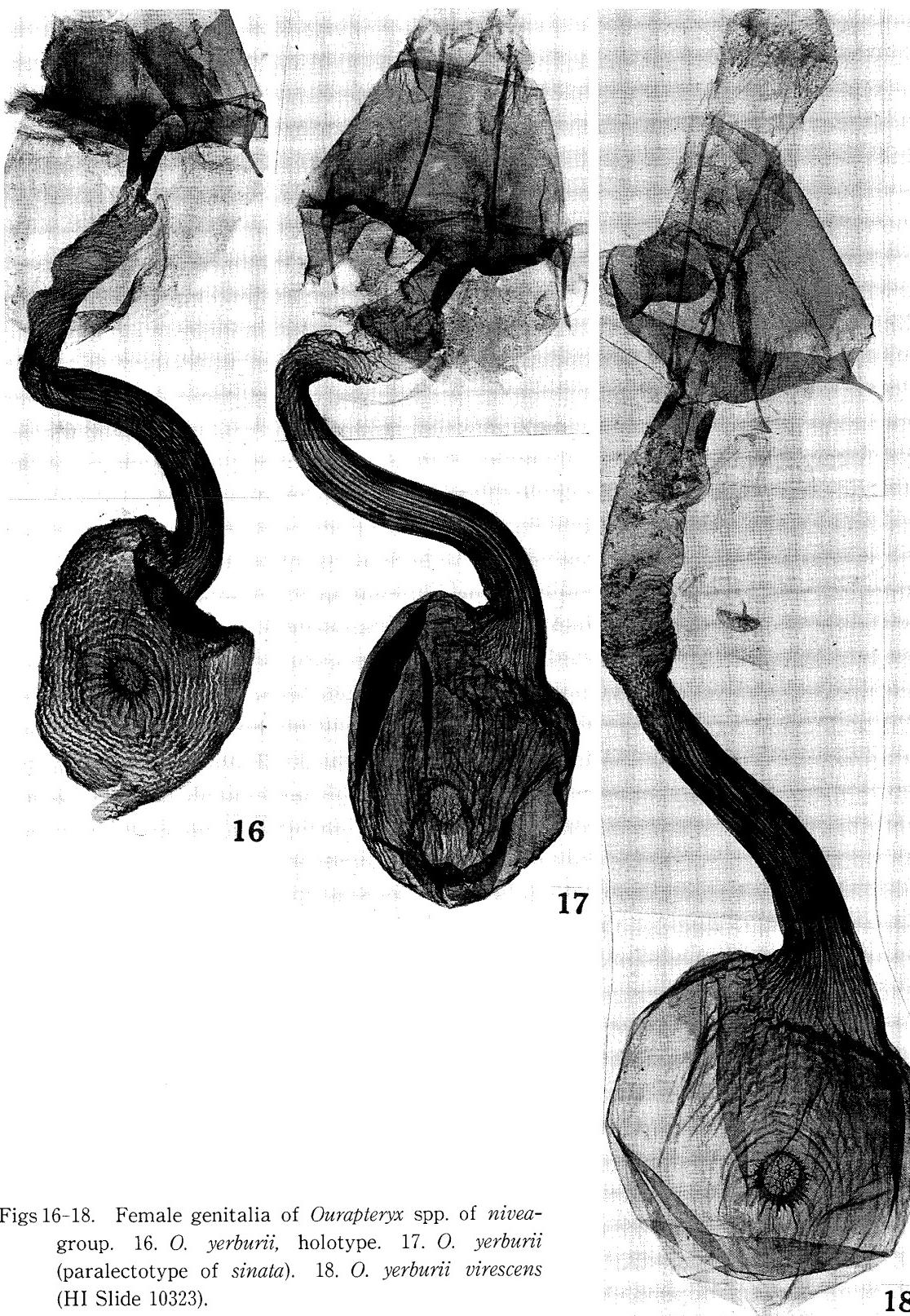
***Ourapteryx nivea* Butler (Figs 5, 6)**

Urapteryx nivea Butler, 1884, *J. Linn. Soc. Lond. (Zool.)* 17 : 199.

Ourapteryx sambucaria var. *persica* (part.) : Staudinger, 1901, in Staudinger & Rebel, *Cat. Lepid. Phal.* (Edn 3) 1 : 330, nec Ménétriès, 1832.

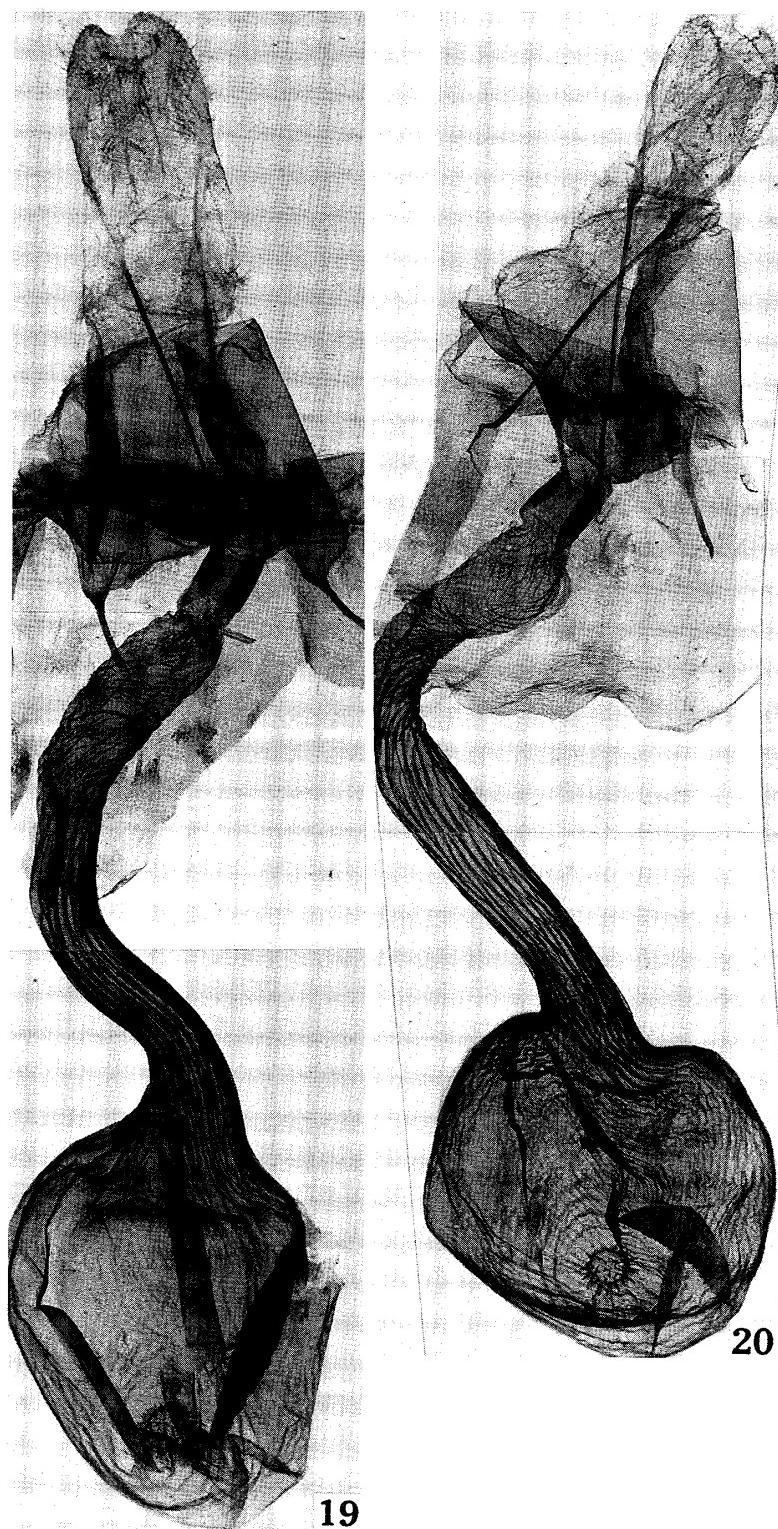
Ourapteryx sambucaria *persica* (part.) : Prout, 1914, in Seitz, *Macrolepid. World* 4 : 335, nec Ménétriès, 1832.

Ourapteryx nivea : Prout, 1930, *Novit. zool.* 35 : 321; Wehrli, 1940, in Seitz, *Macrolepid. World* 4 (Suppl.) : 352, pl. 28 : b; Inoue, 1944, *Trans. Kansai ent. Soc.* 14 : 73, pl. 7 : 1, 2; id., 1957, in Esaki, et al., *Icon.*

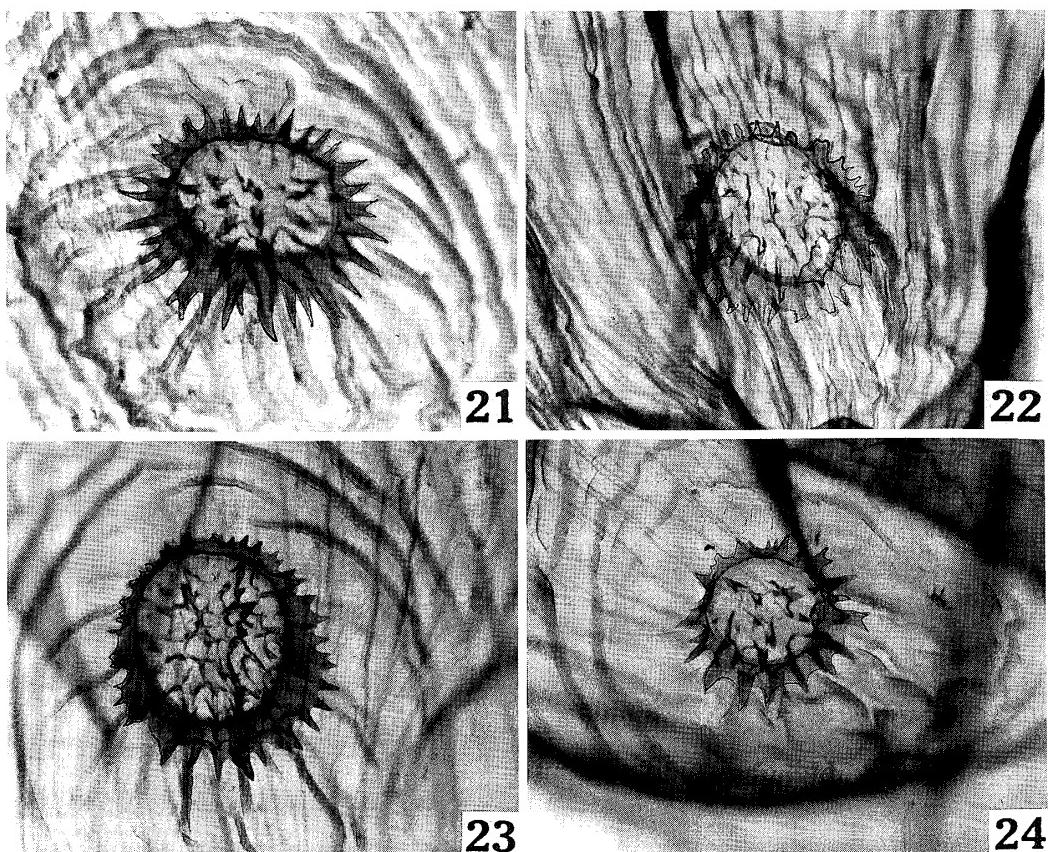


Figs 16-18. Female genitalia of *Ourapteryx* spp. of *nivea*-group. 16. *O. yerburi*, holotype. 17. *O. yerburi* (paratype of *sinata*). 18. *O. yerburi* *virescens* (HI Slide 10323).

Heteroc. Jap. Col. Nat. [1] : 291, pl. 64 : 1547, 1548, fig. 98A ; *id.*, 1959, in Inoue, et al., *Icon. Ins. Jap. Col. Nat. Ed.* 1 : 224, pl. 161 : 6a, b ; Nakajima, 1979, *Tyō Ga* 30 : 52, figs 2, 8, 13, 23, 24, 36, 52, 52 (larvae) ; Inoue, 1982, in Inoue, et al., *Moths Japan* 1 : 572 ; 2 : 310, pl. 108 : 11-13.



Figs 19-20. Female genitalia of *Ourapteryx* spp. of *nivea*-group. 19. *O. koreana* sp. nov., paratype (HI Slide 13237). 20. *O. nivea* (HI Slide 14258).



Figs 21-24. Female genitalia of *Ourapteryx* spp. of *nivea*-group. Signum, greatly magnified.

21. *O. yerburi*, holotype. 22. Ditto (paralectotype of *sinata*). 23. *O. yerburi* *virescens*.
24. *O. nivea*.

Face dark ochreous brown as in *yerburii*; shape of wings almost identical with it, but tail of hindwing decidedly shorter, male has termen of forewing often a little convex at middle. Ground colour and transverse lines nearly identical with *koreana*, but terminal area of hindwing often strongly tinged with pale yellow, the spots at base of tail heavier than in *koreana*, often almost identical with *yerburii*.

Male genitalia (Fig. 15). Gnathos broader at central projection than in the two species, furca more slender, apical area semicircularly arched, tapered, apex downcurved, the highest portion not reaching the base of uncus. Female genitalia (Fig. 20). Caudal one-third of ductus bursae membranous, signum (Fig. 24) smaller than in *yerburii*, with fewer spines, frill narrower.

Specimens examined. Holotype, ♀, labelled: Tokei (=Tokyo), 80. 97. Numerous specimens from Hokkaido to as far south as Iriomotejima, Ryukyu Islands.

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu, Yakushima, Amami-Oshima, Okinawa, Iriomotejima).

Size nearly as *yerburii*; usually autumnal specimens are smaller than those which appear from spring to summer. Usually adults of June to September are yellower than those which appear in spring and autumn to early winter.

Food plants. Polyphagous on Salicaceae, Fagaceae, Ulmaceae, Caprifoliaceae, etc, (Na-

kajima, 1987, in Sugi ed., *Larvae of larger Moths in Japan*: 111, pl. 46: 9-11).

Ourapteryx diminuta Inoue

Ourapteryx diminuta Inoue, 1993, *Tinea* 13: 270, figs 1, 14, 15, 19.

The smallest species of the genus recently discovered from Thailand and Vietnam.

Among several new species of *Ourapteryx* from Indian subcontinent in my cabinet known only from males there must be a few more species belonging to the *nivea*-group with the characteristic ductus bursae.

摘要

Ourapteryx nivea (ウスキツバメエダシャク) グループについて (井上 寛)

Ourapteryx 属のなかで、雌交尾器の ductus bursae がひじょうに細長く、corpus bursae の直径の 2 倍くらい長く、交尾口から 3 分の 1 くらいまでが膜質という特徴をもつグループを、私は *nivea*-group とよんでいる。

パキスタンからの 1 ♂によって命名された *O. yerburi* Butler の正体は従来不明となっていたが、タイプ標本を調べ、解剖した結果、この種が *nivea*-group で、中国東部から記載された *O. sinata* Wehrli がそのシノニムとなり、また台湾の *O. virescens* Matsumura は、これと亜種関係にあることがわかった。本文では朝鮮半島南部から *O. koreana* という新種を記載すると共に、日本の *O. nivea* Butler ウスキツバメエダシャクを再記載した。最近タイ国とベトナムから発見された *O. diminuta* Inoue も同じグループにぞくする。

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